COMPILABLE ADDRESS MAGNITUDE COMPARATOR FOR MEMORY ARRAY SELF-TESTING

ABSTRACT OF THE DISCLOSURE

The present invention provides a method and apparatus that improves Built-In-Self-Test (BIST) flexibility without requiring the complexity of a compilable BIST circuit. Additionally, the present invention provides the ability to use a single BIST to test multiple memory arrays of different sizes. The preferred embodiment of the present invention provides a compilable address magnitude comparator to facilitate BIST testing of different size memory arrays without requiring customization of the BIST controller. The preferred embodiment compilable address magnitude comparator is compiled within the compilable memory arrays of the ASIC to allow a single BIST controller to test multiple sizes of memory arrays without requiring that the BIST controller itself be compilable. In the preferred embodiment, the compilable magnitude address comparator overrides the self-test signal from the BIST when the BIST attempts to test addresses that do not exist in the memory. As such, the BIST is prevented from writing to addresses that do not exist, and does not receive error signals from those addresses. Thus, the BIST controller is able to test memory arrays without regard for their particular size. Furthermore, a single BIST controller can then be used to test multiple memory arrays of different sizes in the ASIC, again reducing device complexity.